



**US Army Corps  
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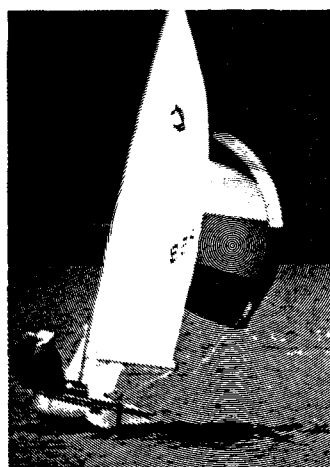
# RECNOTES

NATURAL  
RESOURCES  
RESEARCH  
PROGRAM

VOL R-86-1

INFORMATION EXCHANGE BULLETIN

JAN 1986



Providing an area for operation of off-road vehicles may present planning and management challenges

## CONSIDERATIONS FOR PLANNING AND MANAGING AN OFF-ROAD VEHICLE AREA

*Wayne McCormick*

*Environmental Resources Division, EL, WES*

*Paul Roberts*

*Lake, Tulsa District*

Planning for an off-road vehicle (ORV) area is similar to planning for a high-impact use. Therefore, it is important to be certain that the need for an ORV area exists; the long-term operation, maintenance, and regulation of an ORV area will complement projected budgetary and manpower conditions; and an area suitable for receiving high amounts of physical and noise impacts is available.

Adding the cost of managing another type of recreation into an already lim-

ited budget usually means one of three things:

- The project has been guaranteed operational funds that will easily absorb the workload with an expanded management and maintenance staff.
- User fees will be charged to offset all costs of operation and maintenance.
- The project will "manage more with less."

In the case of the first two options, management could be labor intensive. The third option should be avoided since the designated ORV area could become neglected if operational funds were exhausted.

Once the need for an ORV area has been demonstrated, site selection becomes a critical factor for success. The following questions need to be answered to determine whether there is an area available that would be suitable for ORV use.

First, will the area adversely affect present or planned operations? Sensitive areas that are managed as wildlife or endangered species habitat should be avoided. Areas with noncompatible recreational use, such as primitive or family campgrounds and hiking or horse trails, should be avoided. Also, areas with long-range planned operations that would be adversely affected by ORV use should be deleted from consideration.

Second, is the location far enough from non-compatible use areas so that noise levels won't cause conflicts, yet close enough to be convenient for the ORV users? A buffer area should be delineated between the ORV area boundary and adjacent areas sensitive to loud noises. Buffer area sizes vary depending on type of vegetation cover and topography. Ideally, existing natural or man-made features, such as shorelines, creek beds, firebreaks, or roads, should be used to delineate the ORV boundary (Figure 1).

Third, will the area withstand long-term ecological impacts and will the envisioned impacts outweigh the benefits to the special-use group? The

degree of vegetation loss, soil erosion, and wildlife displacement may vary from one place to another, but managers should recognize these occurrences as unavoidable in ORV recreation.

Fourth, is the location compatible with all types of ORVs? The major types of off-road vehicles include trailbikes, all-terrain vehicles (ATVs), four-wheel-drive vehicles (4WDs), and snowmobiles during winter months in some areas. Considerations include topography (4WDs and snowmobiles may require flatter areas for safety reasons), potential conflicts among different types of ORV users on the same trails (e.g., jeeps versus trailbikes), and tolerable amounts of impacts on natural resources. For example, 4WDs may create deep ruts and accelerate soil erosion.

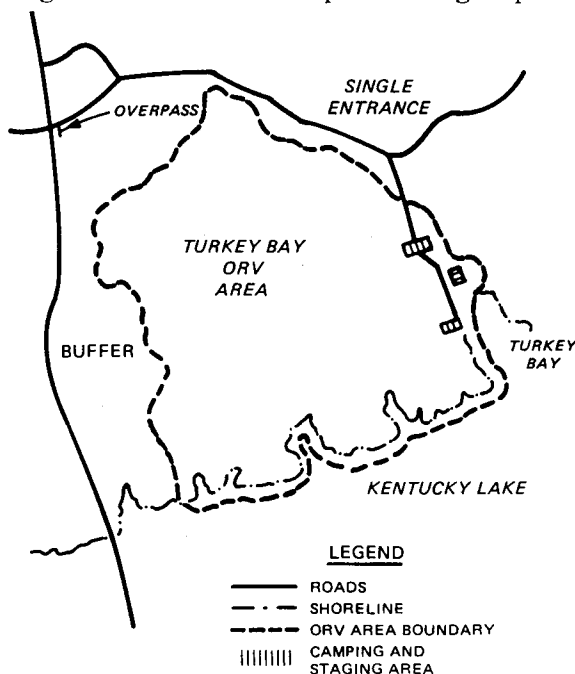
Other considerations in selecting a suitable site for ORV use are the shape of the area and the entrance patterns. Long narrow shapes should be avoided because they create long boundary lines, increasing the potential for conflicts with visitors of adjacent areas compared to a generally square- or round-shaped area. Establishing a single readily-accessible entrance may reduce impacts on non-ORV users in other areas. Having one entry point also allows the manager to have better control of the visitors.

Another factor to consider when designating an area open for ORV use is the need for periodic evaluation of changes that may occur in the ORV area over time, such as physical (environmental impacts) and social (user preferences) changes. Suggested methods for evaluation are photographic records for physical elements and observations along with visitor surveys for social elements. These methods require limited funds and manpower but provide data that could improve the management of the area and satisfaction of its users.

An ORV area can be successful if careful thought is devoted to choosing a suitable site, assessing the resource impacts, and periodically evaluating conflicts between and safety of ORV users. When deciding on whether to open an area for ORV use or how to manage an existing ORV area, managers should outline the full range of considerations as suggested here in addition to individual project considerations.

For more detailed information concerning ORV planning and management, the authors suggest contacting Kenneth C. Chilman, Department of Forestry, and Douglas N. McEwen, Department of Recreation, at Southern Illinois University-Carbondale.

**EDITOR'S NOTE:** The Environmental Division of the US Army Construction Engineering Research Laboratory has publications available on planning and managing off-road courses. For further information, call Dr. Ed Novak, commercial number 217-373-7231 or FTS number 958-7231.



**Figure 1. Example of an ideal design of an ORV area using shoreline and existing roads as boundaries**

# SHORELINE EROSION CONTROL

*David A. Williamson, Park Ranger  
Clark Hill Lake, Savannah District*

EROSION: a common physical phenomenon taking place every day around the world.  
WATER: the largest transporter of eroded soil.

A major concern of the Resource Management staff at almost every Civil Works project is shoreline erosion. And rightfully so, because every day a small portion of our recreation area is being washed away if shorelines are not protected. As stewards of the public's lands, we must make every effort to ensure the stability of these lands for future generations.

The placement of riprap along the shoreline is a common practice used to control erosion. There are many factors, however, that make this practice difficult at best. Slope, size of riprap, method of placement, and so on all come into play in deciding the success of this control method. Other major concerns are continuing maintenance costs and the limiting factor riprap places on public use.

At Clarks Hill Lake, we are installing wooden bulkheads in our busiest recreation areas as an alternative to riprap. In addition to being more pleasing to the eye and blending in with the surroundings, the bulkheads provide much better access to the shoreline while stopping the erosion at the same time.

To withstand pounding by waves and the effects of water-level fluctuations, the bulkheads must be "industrial strength" models (Figure 1). We have succeeded in placing such a wall by working closely with our maintenance contractor.

As with all shoreline erosion controls, the most important factor is site preparation. All of our efforts take place during the winter drawdown, which ensures dryness of the site and provides an adequate working space.

After the location for a wall is selected, a ditch is dug where the main studs are anchored in a concrete footing. Then tongue-and-groove main wall boards are placed in position and backed with an impervious geosynthetic liner, and more concrete is poured around the base. Stabilizing cables are attached to the landward side of the finished wall and to deadman supports anchored in concrete. The area behind the wall is filled, seeded, and mulched.

The finished bulkheads should last for years and protect our valuable resources for the next generation of visitors.



**Figure 1. Bulkheads used to control shoreline erosion provide enhanced beach use**

# AUTOMATIC FUEL-MONITORING SYSTEM

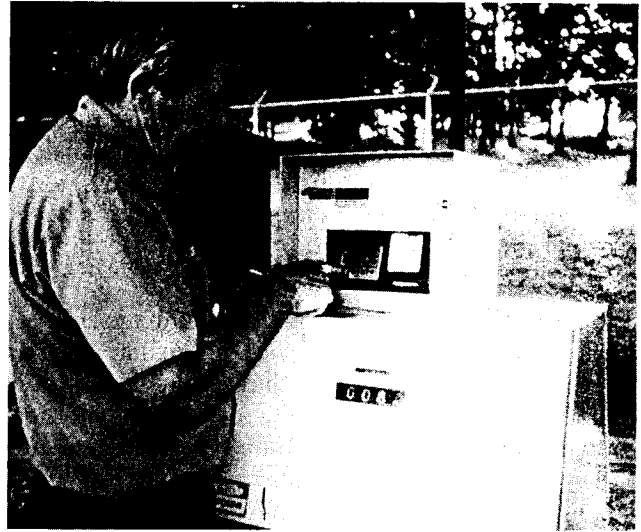
*Julie B. Marcy, Natural Resources  
Management Branch, Vicksburg District*

Do you have limited administrative personnel, numerous vehicle utilization reports to prepare, or difficulty in securing fuel? If your answer is yes, then an automatic fuel monitoring system may be for you.

The Vicksburg District discovered that our current accounting and reporting of bulk fuel requires approximately 16 hours of administrative time per month per project to prepare vehicle utilization reports consisting of four separate forms. Sardis Lake in north Mississippi is attempting to alleviate this time-consuming process with the use of an automatic fuel-monitoring system.

The system, which cost \$4800, consists of a computerized card reader that requests pertinent data from the user, dispenses the fuel, and records the transaction. It eliminates the problem of fuel theft, shortages due to poor record keeping, and the need for a fueling attendant. In addition, the system records data needed for vehicle maintenance evaluations and efficiency studies, and we anticipate an annual savings of at least \$1000 from its use.

Sardis Lake is being used as a test case for this system before installing it at additional Vicksburg



projects. We feel that it will work for us. Could it also work for you?

(For additional information on the automatic fuel-monitoring system in use by the Vicksburg District, call the author at 601 634-5302 (FTS 542-5302).)

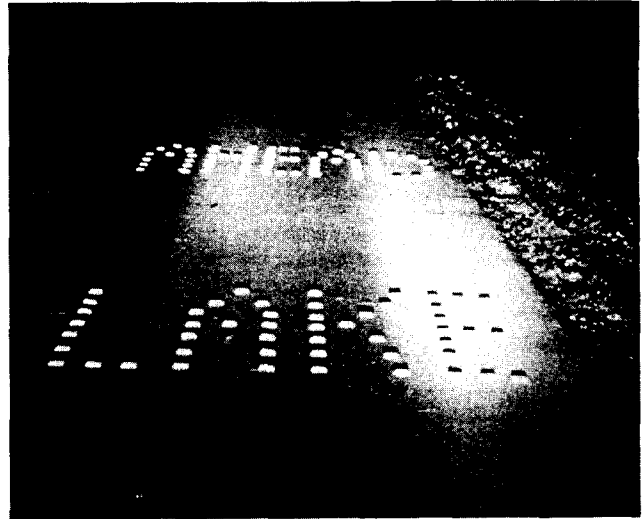


# REFLECTIVE PAVEMENT MARKERS TO ENHANCE VISITOR SAFETY

*Julie B. Marcy, Natural Resources  
Management Branch, Vicksburg District*

Following a 5-year increase in visitor fatalities, the Vicksburg District initiated an intensive multi-faceted visitor safety program in March 1985. The improvement of boat-ramp approaches with reflective pavement markers is an important aspect of this plan.

One-way amber reflective pavement markers with high-impact housing are used to signal LAKE AHEAD or RIVER AHEAD on paved project-access roads. The markers cost approximately 87 cents each and are permanently fixed to the pavement with a two-part epoxy compound. They serve to warn visitors of an approaching body of water by reflecting headlight beams at night and by serving as a chatter strip for a daylight approach. Thus far, the markers have proven to be cost effective and vandal resistant and are well received by the visiting public.



## VOLUNTEER-OPERATED FIRST AID STATION

*Terry A. Ramsey  
Coordinator, Volunteer Program  
J. H. Kerr Reservoir, Boydton, Va.*

A first aid station staffed by a volunteer opened near the entrance of North Bend Park, John H. Kerr Reservoir, on Friday, May 23, 1985, just in time for the long Memorial Day weekend. First aid service is provided by Ms. Clara Watkins, a trained emergency medical technician, who plans to work on major holiday weekends and other weekends that fit into her schedule.

At this time, the volunteer service is entirely dependent on Ms. Watkins. She is approaching hospitals, rescue squads, and civic organizations to stimulate interest in the first aid service, to encourage others trained in first aid to volunteer to operate the station, and to suggest donation of first aid supplies.

Ms. Watkins operated the station for approximately 20 hours during the Memorial Day weekend.

She treated two cases of bee stings. One person suffered a severe reaction to the insect bite and was treated for shock until the rescue unit from South Hill General Hospital arrived.

A portable ranger station was used for the first aid station. A sign, FIRST AID STATION - A VOLUNTEER SERVICE, was placed near the building. The sign has a reversible Open/Closed panel. Because the building was available at the park, there was little expense in setting up the first aid station.

EDITOR'S NOTE: Virginia has a good "Good Samaritan" law, which the Wilmington District counsel believes would apply here since the volunteer is to provide only that aid which she is qualified to perform as a trained EMT (emergency medical technician). Counsel would have to determine the legal status regarding malpractice suits of similar volunteers in other states.



## NATURAL RESOURCES RESEARCH PROGRAM

This bulletin is published in accordance with AR 310-2. It has been prepared and distributed as one of the information dissemination functions of the Environmental Laboratory of the Waterways Experiment Station. It is primarily intended to be a forum whereby information pertaining to and resulting from the Corps of Engineers' nationwide Natural Resources Research Program can be rapidly and widely disseminated to OCE and Division, District, and project offices as well as to other Federal agencies concerned with outdoor recreation. Local reproduction is authorized to satisfy additional requirements. Contributions of notes, news, reviews, or any other types of information are solicited from all sources and will be considered for publication as long as they are relevant to the theme of the Natural Resources Research Program, i.e., to improve the effectiveness and efficiency of the Corps in managing the natural resources while providing recreation opportunities at its water resources development projects. This bulletin will be issued on an irregular basis as dictated by the quantity and importance of information to be disseminated. Communications are welcomed and should be addressed to the Environmental Laboratory, ATTN: A. J. Anderson, U.S. Army Engineer Waterways Experiment Station, P.O. Box 631, Vicksburg, MS 39180-0631, or call AC 601, 634-3657 (FTS 542-3657).

*Allen F. Grum*

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Colonel, USA  
Director

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# OCE NATURAL RESOURCES MANAGEMENT TOPICS

Comments in this issue of RECNOTES were furnished by Winston B. Campbell, who recently completed a five-month tour in Natural Resources Management Branch under the Professional Development Program. Campbell is the manager of Shelbyville Lake, Illinois, in the St. Louis District.

★★★★★

"Who are our customers?" In the October issue of "Engineer Update," General E. R. Heiberg III asked each of us to answer this question. After serving five months in the Resources Management Branch, I sincerely believe that this branch has answered the question. Within the guidelines provided by the Administration, the branch serves its prime customer — we who work at the project level.

From the project, it often appeared to me that I had little influence on policies and procedures. "I am the customer, surely you jest!" How wrong I was. The Resources Management Branch is listening. They listen by way of surveys, telephone conversations, visiting projects, draft documents sent to the field, and through ad hoc committees. And they hear many voices. When your or my thoughts do not prevail, it may be because those who have contrary views may have presented a more convincing case or because persons with higher authority have decided upon a separate course of action. But we were heard, we had our day in court!

Want more personal involvement? The Professional Development Program (5 months) and the Special Assignment Program (2 months) provide a unique opportunity for direct communication with those who mold the thoughts of a nation of resource management professionals into a single document that somehow will serve us all.

Ad hoc committees are another avenue for direct input into the policies and programs for which this branch has responsibility. Volunteers are often sought to assist in gathering information and writing regulations on a variety of topics. Committees that have functioned just during my short stay have addressed training, uniforms, signs, anti-terrorism, uniforms, user fees, and cultural resources. With three of the eight authorized professional positions in the branch currently vacant, the use of ad hoc committees and special assignments will no doubt become more necessary. This will improve the opportunities for those who wish to participate in and learn about policy making at the national level.

There is another area of communication I would like to discuss: communication upward. We often feel that not enough information filters down the pipeline to the projects. The reverse is just as true. Many good, exciting, and (of course) innovative things are happening at divisions, districts, and projects, things that if known to Darrell Lewis and his staff would make their jobs easier — their job of serving us. As I return home, I vow to do my part to keep the Resources Management Branch informed about some of those good things that are going on. I challenge you to do the same. Remember, most of the letters that come here from the public, as at the projects, are letters of complaint. To present a balanced picture, you and I must do a better job of communicating.

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